CLAIMS

1. An engineered welded blank, comprising:

a first sheet metal piece having a first side, a second side and at least one edge,

a second sheet metal piece having a first side, a second side and at least one edge that is thicker than said edge of said first piece, wherein said first and second sheet metal pieces abut one another along an interface of said edges, and

a weld seam extending along at least a portion of said interface, wherein said first sides of said first and second sheet metal pieces are flushly aligned along a first segment of said interface and said second sides of said first and second sheet metal pieces are flushly aligned along a second segment of said interface.

2. The engineered welded blank of claim 1, wherein said edges of said first and second pieces extend in a non-parallel manner, with respect to one another, between said first and second segments.

3. The engineered welded blank of claim 1, wherein said interface extends along a generally linear path between said first and second segments.

4. The engineered welded blank of claim 1, wherein said interface extends along a generally non-linear path between said first and second segments.

5. The engineered welded blank of claim 1, wherein said blank further includes one or more additional segments where said first sides of said first and second sheet metal pieces are flushly aligned.

6. The engineered welded blank of claim 1, wherein said blank further includes one or more additional segments where said second sides of said first and second sheet metal pieces are flushly aligned.

7. The engineered welded blank of claim 1, wherein said engineered welded blank is a laser welded blank.

8. A vehicle door panel assembly that comprises the engineered welded blank of claim 1.

9. An engineered welded blank, comprising:

a first sheet metal piece having an outer side, an inner side and a first edge,

a second sheet metal piece having an outer side, an inner side and a second edge, wherein said first and second edges have unequal thicknesses and abut one another along an edge-to-edge interface, and

a weld seam extending along at least a portion of said interface, wherein a first segment of said interface is stepped between said inner sides of said first and second sheet metal pieces and a second segment of said interface is stepped between said outer sides of said first and second sheet metal pieces.

10. The engineered welded blank of claim 9, wherein said first and second edges extend in a non-parallel manner, with respect to one another, between said first and second segments.

11. The engineered welded blank of claim 9, wherein said interface extends along a generally linear path between said first and second segments.

12. The engineered welded blank of claim 9, wherein said interface extends along a generally non-linear path between said first and second segments.

13. The engineered welded blank of claim 9, wherein said edge-to-edge interface further includes at least one additional segment that is stepped between said inner sides of said first and second sheet metal pieces.

14. The engineered welded blank of claim 9, wherein said edge-to-edge interface further includes at least one additional segment that is stepped between said outer sides of said first and second sheet metal pieces.

15. The engineered welded blank of claim 9, wherein at least one of said first and second segments is located at least partially beyond either said inner side or said outer side of said second sheet metal piece, thereby forming a negative step.

16. The engineered welded blank of claim 9, wherein said first segment is a negative step located at least partially beyond said inner side of said second sheet metal piece and said second segment is a negative step located at least partially beyond said outer side of said second sheet metal piece.

17. The engineered welded blank of claim 9, wherein said engineered welded blank is a laser welded blank.

18. A vehicle door panel assembly that comprises the engineered welded blank of claim 9.

19. A door panel assembly for use on a vehicle, comprising:

an inner door panel including:

a thick sheet metal piece for reinforcing a portion of the inner door panel, said thick piece having an outer side, an inner side and an edge,

a thin sheet metal piece having an outer side, an inner side and an edge that is thinner than said edge of said thick piece, wherein said thick and thin sheet metal pieces abut one another along an interface of said edges, said interface includes a first segment where said inner sides of said thick and thin pieces are flush with each other and a second segment where said outer sides of said thick and thin pieces are flush with each other, and;

a laser welded seam extending along at least a portion of said interface;

an outer door panel, and;

a seal extending along at least a portion of the periphery of said door panel assembly;

wherein said seal extends across said interface at said first segment and said outer door panel contacts said interface at said second segment.

20. A method of manufacturing an engineered welded blank, said method comprising the steps of:

(a) providing first and second sheet metal pieces, said first sheet metal piece having a mating edge that is thinner than a mating edge of said second sheet metal piece,

(b) bringing said mating edges together along an interface while maintaining said second sheet metal piece in a non-planar alignment, and

(c) welding said first and second sheet metal pieces together along said interface.

21. The method stated in claim 20, wherein step (b) further comprises bringing said mating edges together such that first sides of said first and second sheet metal pieces are flushly aligned along a first segment of said interface.

22. The method stated in claim 21, wherein step (b) further comprises bringing said mating edges together such that second sides of said first and second sheet metal pieces are flushly aligned along a second segment of said interface.

23. The method stated in claim 22, wherein step (b) further comprises bringing said mating edges together such that said edges extend between said first and second segments along said interface in a non-parallel manner, with respect to one another.

24. The method stated in claim 22, wherein step (b) further comprises bringing said mating edges together such that said interface extends along a generally non-linear path between said first and second segments.

25. The method stated in claim 20, wherein step (c) further comprises laser welding said first and second sheet metal pieces together along said interface.